

QUIZ NAVIGATION



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Started on	Sunday, 20 October 2024, 5:29 AM
State	Finished
Completed on	Sunday, 20 October 2024, 5:36 AM
Time taken	6 mins 53 secs
Grade	10.00 out of 10.00 (100%)

Question 1

ID: 56371

Correct

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THE NEXT THREE QUESTIONS INCLUSIVE REFER TO THE FOLLOWING CASE:

KS, a 52 year old female, is a patient with metastatic breast cancer. She tells you that she has been experiencing diarrhea lately and has 3-4 loose stools per day. She has no blood in her stools and no known drug allergies. Her list of current medications include:

- Omeprazole 20 mg OD
- Glidazide MR 60 mg OD
- Ramipril 10 mg OD
- Ibuprofen 400 mg PO as needed
- Irinotecan 350 mg/m²
- Lorazepam 1 mg BID PRN

What is the most likely cause of KS's chemotherapy-induced diarrhea (CID)?

Select one:

☒ Irinotecan ✓

Rose Wang (ID:113212) this answer is correct. Irinotecan is the most likely cause of CID.

☐ Lorazepam ✗

☐ Omeprazole ✗

☐ Glicazide ✗

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects**LEARNING OBJECTIVE:**

Assess the side effects caused by chemotherapy agents and identify which medications can increase a patient's risk of developing these side effects.

BACKGROUND:

Chemotherapy-induced diarrhea (CID) is a common side effect caused by chemotherapy agents, especially for patients with advanced cancer. The onset of diarrhea symptoms usually comes within days or weeks of initiating chemotherapy. Diarrhea may lead to dehydration, electrolyte imbalance, renal insufficiency, immune dysfunction and in extreme cases, death. Common chemotherapy agents that cause CID include alkylating agents, antimetabolites, irinotecan, platinum compounds, and taxanes. The Common Terminology Criteria for Adverse Events classifies the grade of diarrhea on a scale from one (mild) to five (death) according to the number of stools per day.

In order to manage CID, chemotherapy is often withheld until symptoms of diarrhea resolve. For non-pharmacologic treatment options, hydration through fluids and consuming a BRAT (bananas, rice, applesauce, and toast) diet may help alleviate symptoms. A standard dose of loperamide is considered the first-line therapy for CID. However, high-dose loperamide is often needed for irinotecan regimens and regimens that are non-responsive to standard dosing. In more severe cases (grade 3-4), IV hydration, an antibiotic, and octreotide are suggested treatment options.

RATIONALE:**Correct Answer:**

- **Irinotecan** - Irinotecan is the most likely cause of CID.

Incorrect Answers:

- **Lorazepam** - Lorazepam does not cause CID.
- **Omeprazole** - Omeprazole does not cause CID.
- **Gliclazide** - Gliclazide does not cause CID.

TAKEAWAY/KEY POINTS:

Irinotecan is a chemotherapy agent that is likely to cause diarrhea in cancer patients.

REFERENCE:

[1] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of

Question 2

ID: 56372

Correct

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What would you recommend to KS at this time?

Select one:

☒ Loperamide 4 mg STAT then 2 mg Q2H

Rose Wang (ID:113212) this answer is correct. This is high-dose loperamide, which is the most appropriate treatment for CID caused by irinotecan.

☐ Loperamide 4 mg STAT then 2 mg after every bowel movement ✗

☐ Octreotide 150 mcg SC ✗

☐ Atropine 1 tab QID PRN ✗

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

Assess the side effects caused by chemotherapy agents and identify which medications can increase a patient's risk of developing these side effects.

BACKGROUND:

Chemotherapy-induced diarrhea (CID) is a common side effect caused by chemotherapy agents, especially for patients with advanced cancer. The onset of diarrhea symptoms usually comes within days or weeks of initiating chemotherapy. Diarrhea may lead to dehydration, electrolyte imbalance, renal insufficiency, immune dysfunction, and in extreme cases, death. Common chemotherapy agents that cause CID include alkylating agents, antimetabolites, irinotecan, platinum compounds, and taxanes. The Common Terminology Criteria for Adverse Events classifies the grade of diarrhea on a scale from one (mild) to five (death) according to the number of stools per day.

In order to manage CID, chemotherapy is often withheld until symptoms of diarrhea resolve. For non-pharmacologic treatment options, hydration through fluids and consuming a BRAT (bananas, rice, applesauce, and toast) diet may help alleviate symptoms. A standard dose of loperamide (4 mg STAT then 2 mg after every bowel movement) is considered the first-line therapy for CID. However, high-dose loperamide (4 mg STAT then 2 mg Q2H) is often needed for irinotecan regimens and regimens that are non-responsive to standard dosing. In more severe cases of CID (grade 3-4), IV hydration, an antibiotic, and octreotide are suggested treatment options. Atropine does not have evidence for use and is not included within the guidelines for CID.

RATIONALE:

Correct Answer:

- **Loperamide 4 mg STAT then 2 mg Q2H** - This is high-dose loperamide, which is the most appropriate treatment for CID caused by irinotecan.

Incorrect Answers:

- **Loperamide 4 mg STAT then 2 mg after every bowel movement** - This is not high-dose loperamide, thus it is not the most appropriate treatment for CID caused by irinotecan.
- **Octreotide 150 mcg SC** - KS is not experiencing severe CID, thus this is not the first-line therapy.
- **Atropine 1 tab QID PRN** - Atropine lacks supportive evidence for use and is not included within the guidelines.

TAKEAWAY/KEY POINTS:

High-dose loperamide should be used first-line for CID caused by irinotecan.

REFERENCE:

[1] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrxtx.ca>

The correct answer is: Loperamide 4 mg STAT then 2 mg Q2H

Question 3

ID: 56373

Correct

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KS returns to the clinic after 1 month and now presents with fatigue and weakness, which she attributes to her perimenopause. She tells you that her hemoglobin levels have significantly decreased lately (Hb is 69g/L) and the symptoms are affecting her quality of life.

Which of the following is the most appropriate recommendation for KS at this time?

Select one:

☐ Avoid caffeine, alcohol and stress ✗

• Darbepoetin to manage fatigue

Rose Wang (ID:113212) this answer is correct. Her anemia is induced by chemotherapy and requires an erythropoiesis-stimulating agent (ESA) to manage her symptoms.

- Venlafaxine to manage menopausal symptoms ✗
- Discontinue lorazepam as it may be causing her weakness ✗

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To understand the side effect profile of chemotherapy agents and how to appropriately prevent and manage these side effects (e.g. anemia).

BACKGROUND:

The majority of cancer patients undergoing chemotherapy develop anemia during their treatment, some due to chemotherapy and others as a result of their disease. Anemia may present with symptoms such as fatigue, weakness, and dyspnea, which leads to a worsening quality of life and performance status in cancer patients. A various number of mechanisms cause anemia. For example, anemia due to short-term myelosuppression has been associated with chemotherapy agents like cytarabine, methotrexate, anthracyclines, and etoposide. Other causes for anemia include immune-mediated hematopoietic cell destruction by agents like cisplatin and oxaliplatin. Patients should be first assessed for other underlying causes of anemia (e.g. nutritional deficiencies). The mainstays of treatment for symptomatic anemia induced by chemotherapy are packed red blood cell (RBC) transfusions and/or recombinant human erythropoiesis-stimulating agents (ESAs) with or without iron supplementation. Transfusion is an effective way to replace depleted hemoglobin within a short period, particularly in patients with severe and symptomatic anemia. However, the effects of RBC transfusion are temporary and can cause serious adverse events such as thromboembolism and increased mortality. Thus, ESAs such as epoetin alfa and darbepoetin alfa are helpful in reducing the need for transfusion in select patients with hemoglobin <100 g/L. In patients with functional iron deficiency, IV iron dextran or iron sucrose are given in adjunct with ESA to improve its effectiveness in increasing hemoglobin.

RATIONALE:

Correct Answer:

- **Darbepoetin to manage fatigue** - Her anemia is induced by chemotherapy and requires an erythropoiesis-stimulating agent (ESA) to manage her symptoms.

Incorrect Answers:

- **Avoid caffeine, alcohol and stress** - KS is experiencing anemia induced by chemotherapy and requires an erythropoiesis-stimulating agent (ESA) to manage her symptoms.
- **Venlafaxine to manage menopausal symptoms** - KS is experiencing anemia induced by chemotherapy and requires an erythropoiesis-stimulating agent (ESA) to manage her symptoms.
- **Discontinue lorazepam as it may be causing her weakness** - KS is experiencing anemia induced by chemotherapy and requires an erythropoiesis-stimulating agent (ESA) to manage her symptoms.

TAKEAWAY/KEY POINTS:

Anemia is a common side effect of chemotherapy. Treatments depend on the severity of the anemia and include RBC transfusions, recombinant human erythropoiesis-stimulating agents (ESAs), and/or IV iron.

REFERENCE:

- [1] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrxbx.ca>.
[2] Drews R. Hematologic complications of malignancy: anemia and bleeding. In: Schrier S, ed. *UpToDate*. Waltham, MA: UpToDate. www.uptodate.com.

The correct answer is: Darbepoetin to manage fatigue

Question 4

ID: 56374

Correct

Flag question

Send Feedback

THE NEXT 3 QUESTIONS INCLUSIVE REFER TO THE FOLLOWING CASE:

GB is a 55 year old male who is receiving treatment for myeloma. His list of medications include:

- Bortezomib IV
- Melphalan PO
- Prednisone PO

He wants to get his flu shot this year and is wondering if vaccinations, in general, are safe for him.

What advice would you give to GB?

Select one:

- GB should receive the FluMist® to ensure he is protected from the flu ✗
- GB should not receive the flu vaccination because he may be immunocompromised ✗

☐ Live, attenuated vaccines are the best option for patients with cancer ✖

☒ GB should receive his flu shot but avoid all live attenuated vaccines because he may be immunocompromised ✔

Rose Wang (ID:113212) this answer is correct. Only inactivated flu vaccinations are safe for patients with cancer.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To understand which vaccinations are safe and which should be avoided in cancer patients on immunosuppressive therapy.

BACKGROUND:

Individuals with cancer have compromised immune systems that increase their susceptibility to various infections. The risks vary depending on the type of malignancy, chemotherapy, radiotherapy, and immunotherapy. Although vaccines may be beneficial to cancer patients in prevention, they are not recommended to be given during immunosuppressing treatments like chemotherapy or radiation therapy. This is mainly because patients, in their immunocompromised states, may not be able to mount an adequate immune response to the vaccine, thereby decreasing its efficacy. Patients should receive their vaccines prior to initiation of immunosuppressive therapy: >2 weeks prior for inactivated vaccines and >4 weeks prior for live virus vaccines.

In particular, live vaccines should be avoided during immunosuppressive therapy (e.g., chemotherapy) due to the risk of vaccine-derived infections. Inactivated vaccines should also be avoided due to their decreased efficacy in this population. The only exception to this recommendation is the inactivated influenza vaccine which is recommended to be given annually to cancer patients. However, in patients receiving anti-B cell antibodies (e.g., rituximab), the influenza vaccine should be delayed for six months due to poor immunogenicity. Anti-viral prophylaxis may also be considered in select, high-risk populations.

RATIONALE:

Correct Answer:

- **GB should receive his flu shot but avoid all live attenuated vaccines because he may be immunocompromised** - Only inactivated flu vaccinations are safe for patients with cancer.

Incorrect Answers:

- **GB should receive the FluMist® to ensure he is protected from the flu** - FluMist® is a live attenuated vaccine and should not be given to patients with cancer.
- **GB should not receive the flu vaccination because he may be immunocompromised** - Vaccines may not be given during chemotherapy or radiation treatments, except the inactivated flu vaccine.
- **Live, attenuated vaccines are the best option for patients with cancer** - Patients with cancer are immunocompromised and should not be given live vaccines.

TAKEAWAY/KEY POINTS:

Patients with cancer are immunocompromised and should not receive any live or inactivated vaccines during immunosuppressive therapy, with the exception of the inactivated influenza vaccine to be administered annually.

REFERENCE:

[1] Hibberd, P. Immunizations in adults with cancer. In: Boeckh M, ed. UpToDate. Waltham, MA: UpToDate. www.uptodate.com.

The correct answer is: GB should receive his flu shot but avoid all live attenuated vaccines because he may be immunocompromised

Question 5

ID: 56375

Correct

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Two months later, GB returns to the clinic complaining of pain, swelling and warmth in his leg. He also noticed some red discoloration in that area.

Which of the following diagnoses explains his symptoms?

Select one:

☒ GB may have a deep vein thrombosis ✔

Rose Wang (ID:113212) this answer is correct. GB's symptoms are consistent with a deep vein thrombosis.

☐ GB is experiencing a reaction from the flu vaccine he received 2 weeks ago ✖

☐ GB is experiencing an allergic reaction to his chemotherapy medication ✖

☐ GB is experiencing signs and symptoms of heart failure ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To identify deep vein thrombosis (DVT) and be able to distinguish symptoms of DVT from other symptoms.

BACKGROUND:

A blood clot, also known as thromboembolism, is a serious side effect of cancer and cancer treatment. A venous thromboembolism (VTE) is a blood clot that develops in a blood vessel, called a vein, that carries blood to the heart. It most often develops in the legs, thighs, or pelvis, and this is classified as a deep vein thrombosis (see image below). However, the blood clot may develop in any vein in the body. A pulmonary embolism (PE) is a blood clot that has traveled from a different location in the body to the lung and can be life-threatening if the clot is large enough to block the blood supply. The symptoms of DVT include pain, swelling, and redness of calf, leg and/or thigh. The symptoms of PE include shortness of breath, chest pain, tachycardia, coughing up blood, and fainting.

RATIONALE:

Correct Answer:

- **GB may have a deep vein thrombosis** - GB's symptoms are consistent with a deep vein thrombosis.

Incorrect Answers:

- **GB is experiencing a reaction from the flu vaccine he received 2 weeks ago** - GB's symptoms are not consistent with an allergic reaction.
- **GB is experiencing an allergic reaction to his chemotherapy medication** - GB's symptoms are not consistent with an allergic reaction.
- **GB is experiencing signs and symptoms of heart failure** - GB's symptoms are not consistent with heart failure.

TAKEAWAY/KEY POINTS:

Cancer patients are more susceptible to developing venous thromboembolisms, particularly DVTs, which present as pain, swelling, and redness of the calf, leg and/or thigh.

REFERENCE:

[1] CancerNet. Preventing and treating blood clots. <http://www.cancer.net/research-and-advocacy/asco-care-and-treatment-recommendations-patients/preventing-and-treating-blood-clots>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrx.ca>.

The correct answer is: GB may have a deep vein thrombosis

Question 6

ID: 36376

Correct

Flag question

Send Feedback

Which of the following is the most appropriate recommendation for GB?

Select one:

- ☐ Decrease dose of bortezomib ✖
- ☐ Initiate warfarin and treat for 3 - 6 months ✖
- ☒ Initiate low molecular weight heparin and treat for 3 - 6 months ✔
- ☐ Discontinue bortezomib and initiate bevacizumab ✖

Rose Wang (ID: 113212) this answer is correct. LMWH is the preferred therapy for treatment of deep vein thrombosis.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To identify deep vein thrombosis (DVT) in cancer patients and understand therapeutic alternatives for treatment.

BACKGROUND:

A blood clot, also known as thromboembolism, is a serious side effect of cancer and cancer treatment. A venous thromboembolism (VTE) is a blood clot that develops in a blood vessel, called a vein, that carries blood to the heart. It most often develops in the legs, thighs, or pelvis, and this is classified as a deep vein thrombosis (see image below). However, the blood clot may develop in any vein in the body. A pulmonary embolism (PE) is a blood clot that has traveled from a different location in the body to the lung and can be life-threatening if the clot is large enough to block the blood supply.

The symptoms of DVT include pain, swelling, and redness of calf, leg and/or thigh. The symptoms of PE include shortness of breath, chest pain, tachycardia, coughing up blood, and fainting.

Anticoagulation is indicated for cancer patients with active VTE (PE or DVT). In the acute stage, low molecular weight heparins (LMWH) are preferred as initial therapy over unfractionated heparin (UFH), fondaparinux, or new oral anticoagulants (e.g. direct thrombin and factor Xa inhibitors). Following, patients should be treated with anticoagulation, traditionally LMWH, for at least 3 to 6 months. LMWH is preferred over warfarin due to its superior efficacy in reducing the rate of recurrent VTE in numerous studies. The choice of anticoagulant

should ultimately be made depending on patient factors like renal function, compliance with daily injections, cost, co-morbidities, life expectancy, and values.

RATIONALE:

Correct Answer:

- **Initiate low molecular weight heparin and treat for 3 - 6 months** - LMWH is the preferred therapy for treatment of deep vein thrombosis.

Incorrect Answers:

- **Decrease dose of bortezomib** - GB is experiencing deep vein thrombosis and requires acute treatment of clot.
- **Initiate warfarin and treat for 3 - 6 months** - LMWH is preferred over warfarin for treatment of deep vein thrombosis.
- **Discontinue bortezomib and initiate bevacizumab** - GB is experiencing deep vein thrombosis and requires acute treatment of clot.

TAKEAWAY/KEY POINTS:

Low molecular weight heparin is the preferred therapy for acute and long-term treatment of VTEs in cancer patients.

REFERENCE:

[1] CancerNet. Preventing and treating blood clots. <http://www.cancer.net/research-and-advocacy/asco-care-and-treatment-recommendations-patients/preventing-and-treating-blood-clots>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrx.ca>.

[3] Bauer, K. Treatment of venous thromboembolism in patients with malignancy. In: Leung L, ed. *UpToDate*. Waltham, MA: UpToDate. www.uptodate.com.

The correct answer is: Initiate low molecular weight heparin and treat for 3 - 6 months

Question 7

ID: 56377

Correct

Flag question

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THE NEXT 2 QUESTIONS INCLUSIVE REFER TO THE FOLLOWING CASE:

TJ, a 60 year old male, comes to the clinic with swelling inside his mouth and throat. He describes the swelling as terribly painful with soft, white patches that are affecting his ability to eat. TJ is currently undergoing chemotherapy with carboplatin and methotrexate. He smoked for 4 years but has recently quit due to his doctor's advice.

All of the following are ways for TJ to prevent future mucositis events, **EXCEPT**:

Select one:

- ☐ Cryotherapy during chemotherapy ✗
- ☐ Palifermin for high dose chemotherapy ✗
- ☒ Alcoholic mouthwash ✓
- ☐ Salt or bicarbonate rinse ✗

Rose Wang (ID:113212) this answer is correct. Only non-alcoholic mouthwashes are recommended for the prevention of mucositis.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To understand the side effect profile of chemotherapy agents and how to appropriately prevent and/or manage these side effects.

BACKGROUND:

Mucositis refers to mouth sores, oral mucositis or esophagitis. It can range in severity from a red, sore mouth and/or gums to open sores that can leave a patient unable to eat. Both chemotherapy and radiation therapy can increase a patient's risk for developing mucositis due to the apoptosis of rapidly dividing cells throughout the entire gastrointestinal tract. It is recommended to utilize specific techniques to take care of the mouth during cancer treatment. Techniques for prevention include cryotherapy during chemotherapy, palifermin for high-dose chemotherapy and good oral hygiene (i.e. brushing, flossing, non-alcoholic mouthwash, salt or bicarbonate rinse). If a patient were to develop mucositis, it can be managed by using a saline rinse or compounded products such as lidocaine, diphenhydramine, nystatin, or dexamethasone.

RATIONALE:

Correct Answer:

- **Alcoholic mouthwash** - Only non-alcoholic mouthwashes are recommended for the prevention of mucositis.

Incorrect Answers:

- **Cryotherapy during chemotherapy** - This is an effective way of preventing mucositis.
- **Palifermin for high dose chemotherapy** - This is an effective way of preventing mucositis.
- **Salt or bicarbonate rinse** - This is an effective way of preventing mucositis.

TAKEAWAY/KEY POINTS:

Mucositis is a common side effect of chemotherapy and can be managed with cryotherapy, palifermin, and good oral hygiene (e.g. non-alcoholic mouthwash).

REFERENCE:

[1] CancerNet. Mouth sores or mucositis. <http://www.cancer.net/navigating-cancer-care/side-effects/mouth-sores-or-mucositis>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrx.ca>.

[3] Vachani, C. Mucositis: the basics. <https://www.oncolink.org/support/side-effects/mucositis/mucositis-the-basics>.

The correct answer is: Alcoholic mouthwash

Question 8

ID: 56378

Correct

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TJ is given a compounded mouthwash for his painful mouth sores.

Compounds with the following active ingredients will help TJ, **EXCEPT**:

Select one:

- ☐ Lidocaine ✗
- ☐ Diphenhydramine ✗
- ☐ Dexamethasone ✗
- ☒ Aprepitant ✓

Rose Wang (ID:113212) this answer is correct. Compounds containing aprepitant will not be helpful in managing mucositis.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To understand the side effect profile of chemotherapy agents and how to appropriately prevent and/or manage these side effects.

BACKGROUND:

Mucositis refers to mouth sores, oral mucositis or esophagitis. It can range in severity from a red, sore mouth and/or gums to open sores that can leave a patient unable to eat. Both chemotherapy and radiation therapy can increase a patient's risk for developing mucositis due to the apoptosis of rapidly dividing cells throughout the entire gastrointestinal tract. Techniques for prevention include cryotherapy during chemotherapy, palifermin for high-dose chemotherapy, and good oral hygiene (i.e. brushing, flossing, non-alcoholic mouthwash, salt or bicarbonate rinse). If a patient develops mucositis, it can be managed by using a saline rinse or compounded products containing ingredients like lidocaine, diphenhydramine, nystatin, or dexamethasone.

RATIONALE:**Correct Answer:**

- **Aprepitant** - Compounds containing aprepitant will not be helpful in managing mucositis.

Incorrect Answers:

- **Lidocaine** - Compounds containing lidocaine will be helpful in managing mucositis.
- **Diphenhydramine** - Compounds containing diphenhydramine will be helpful in managing mucositis.
- **Dexamethasone** - Compounds containing dexamethasone will be helpful in managing mucositis.

TAKEAWAY/KEY POINTS:

Mucositis due to chemotherapy can be managed using a saline rinse or compounded products such as lidocaine, diphenhydramine, nystatin, or dexamethasone.

REFERENCE:

[1] CancerNet. Mouth sores or mucositis. <http://www.cancer.net/navigating-cancer-care/side-effects/mouth-sores-or-mucositis>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrx.ca>.

[3] Vachani, C. Mucositis: the basics. <https://www.oncolink.org/support/side-effects/mucositis/mucositis-the-basics>.

The correct answer is: Aprepitant

Question 9

ID: 36370

Correct

Flag question

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THE NEXT 2 QUESTIONS INCLUSIVE REFER TO THE FOLLOWING CASE:

AI, a 45 year old male, presents with red, swollen, peeling skin on the palms of his hands and soles of his feet. Two months ago, AI was diagnosed with Stage II-B colorectal cancer which was found to be invading the duodenum and pancreas. He has been receiving chemotherapy with capecitabine and oxaliplatin every 3 weeks. He has a 10-year history of smoking and has no known drug allergies. He occasionally drinks alcohol at social events and parties. His current medications include:

- Furosemide 100 mg PO
- Ibuprofen 400 mg PO prn
- Oxaliplatin 85 mg/m²
- Capecitabine 2000 mg/m²
- Lorazepam 1 mg BID prn
- Metoclopramide 20 mg Q6H PO prn

What is the most likely cause of AI's symptoms?

Select one:

☐ Progression of colorectal cancer ✖

☒ Capecitabine ✔

Rose Wang (ID: 113212) this answer is correct. Hand-foot syndrome is a common adverse reaction of capecitabine.

☐ Oxaliplatin ✖

☐ Metoclopramide ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To recognize the symptoms of hand-foot syndrome and identify which chemotherapy agents increase a patient's risk for developing this side effect.

BACKGROUND:

Hand-foot syndrome, also known as palmar-plantar erythrodysesthesia, is a side effect caused by specific cancer treatments such as capecitabine, liposomal doxorubicin, sorafenib, sunitinib, and fluorouracil (5-FU). It presents as redness, swelling, and pain on the palms of the hands and/or soles of the feet. Blistering, ulcerations, and sores on the skin are less common but may also occur as a result of this condition. Hand-foot syndrome is a result of select cancer agents that affect the growth of skin cells and small blood vessels in the hands and feet. Preventative methods include applying moisturizers, cooling hands and feet frequently, avoiding ill-fitting shoes/clothing and vitamin B₆. This condition can be managed by decreasing the dose of the causative agent and by applying an emollient on ulcerations and desquamations. If the symptoms are severe or recur even with a decreased dose, the causative agent should be stopped.

RATIONALE:

Correct Answer:

- **Capecitabine** - Hand-foot syndrome is a common adverse reaction of capecitabine.

Incorrect Answers:

- **Progression of colorectal cancer** - This adverse reaction is not due to the progression of cancer.
- **Oxaliplatin** - Oxaliplatin is not known to cause these symptoms.
- **Metoclopramide** - Metoclopramide is not known to cause these symptoms.

TAKEAWAY/KEY POINTS:

Hand-foot syndrome presents as redness and swelling on the hands and feet and is a side effect of chemotherapy agents such as capecitabine.

REFERENCE:

[1] CancerNet. Hand-foot syndrome or palmar-plantar erythrodysesthesia. <http://www.cancer.net/navigating-cancer-care/side-effects/hand-foot-syndrome-or-palmar-plantar-erythrodysesthesia>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrx.ca>.

The correct answer is: Capecitabine

Question 10

ID: 56369

Correct

Flag question

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All of the following are ways to manage AI's symptoms, **EXCEPT**:

Select one:

☒ Dose interruption and increase ✓

Rose Wang (ID:113212) this answer is correct. A dose decrease is warranted to manage hand-foot syndrome.

☐ Discontinue drug if the severity of symptoms increase ✗

☐ Apply emollient on ulcerations ✗

☐ Apply emollient on desquamation ✗

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Chemotherapy-Induced Side Effects

LEARNING OBJECTIVE:

To recognize symptoms of hand-foot syndrome and understand therapeutic alternatives for its treatment.

BACKGROUND:

Hand-foot syndrome, also known as palmar-plantar erythrodysesthesia, is a side effect caused by specific cancer treatments such as capecitabine, liposomal doxorubicin, sorafenib, sunitinib, and fluorouracil (5-FU). It presents as redness, swelling, and pain on the palms of the hands and/or soles of the feet. Blistering, ulcerations, and sores on the skin are less common but may also occur as a result of this condition. Hand-foot syndrome is a result of select cancer agents that affect the growth of skin cells and small blood vessels in the hands and feet. Preventative methods include applying moisturizers, cooling hands and feet frequently, avoiding ill-fitting shoes/clothing and vitamin B₆. This condition can be treated by decreasing the dose of the causative agent and by applying an emollient on ulcerations and desquamation. If the symptoms are severe or recur even with a decreased dose, the causative agent should be stopped.

RATIONALE:**Correct Answer:**

- **Dose interruption and increase** - A dose decrease is warranted to manage hand-foot syndrome.

Incorrect Answers:

- **Discontinue drug if the severity of symptoms increase** - This is true regarding the management of hand-foot syndrome.
- **Apply emollient on ulcerations** - This is true regarding the management of hand-foot syndrome.
- **Apply emollient on desquamation** - This is true regarding the management of hand-foot syndrome.

TAKEAWAY/KEY POINTS:

Hand-foot syndrome is treated by decreasing the dose of the causative agent and applying an emollient on ulcerations and desquamation.

REFERENCE:

[1] CancerNet. Hand-foot syndrome or palmar-plantar erythrodysesthesia. <http://www.cancer.net/navigating-cancer-care/side-effects/hand-foot-syndrome-or-palmar-plantar-erythrodysesthesia>.

[2] Leung M. Management of side effects of chemotherapy and radiation therapy. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. <https://myrxtx.ca>.

The correct answer is: Dose interruption and increase

Finish review